



## **Method Summary**

### **Determination of SVOC in Soils by GC-MS**

#### **Scope and Range**

This method consists of a procedure to determine semi-volatile organic compounds (SVOC) in organic extracts. The compounds detected must be soluble in or dichloromethane/acetone and be capable of being eluted, without derivatisation, as sharp peaks from a gas chromatography column. This method is applicable for the analysis of soil samples

#### **References**

Semivolatile organic compounds by gas chromatography/mass spectroscopy. (USEPA SW-8270D)

#### **Principle**

Samples are homogenised and extracted by sonication in DCM/acetone. The organic compounds are extracted from the soil using cold solvent in a sonic bath.

A known volume of the sample extract is injected onto a suitable capillary GC column, subjected to a programmed temperature ramp, and MSD identification is performed using Selective Ion Monitoring (SIM) mode. Quantification of analytes is carried out by the internal standard with response factors technique, using six deuterated internal standards. The relative response of the detector to the various components is taken into consideration in the calculations together with any dilution factors. The recoveries of the surrogate compounds are used to monitor extraction efficiency.

#### **Interferences**

Solvents, reagent glassware and other sample processing hardware may yield artefacts and/or interferences to sample analysis. All of these materials must be demonstrated to be free from interferences under the conditions of the analysis. This is undertaken by analysis of extracted blanks.

Interferences con-extracted from the sample will vary considerably from source to source. If analysis of an extracted sample is prevented due to interferences it may be necessary to raise the detection limit.

Raw GC data from all blanks, samples and spikes must be evaluated for interferences. It must be determined if the source of the interference is in the preparation, extraction or analysis stage and corrective action must be taken to eliminate the problem.